PB-240 401

CROSS LAKE, CAYUGA AND ONONDAGA COUNTIES, NEW YORK

Pacific Northwest Environmental Research Laboratory

Prepared for:

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16. ABSTRACT
Annual total phosphorus and total nitrogen loadings to the lake were estimated and subdivided according to either point or non-point source origin. An assessment of the lake's trophic condition and limiting nutrient is also provided. All data collected by the U.S.E.P.A. National Eutrophication Survey during the one year study of the lake and its tributaries are included in the report.

17. KEY WORDS AND DOCUMENT ANALYSIS

a. DESCRIPTORS	b. IDENTIFIERS/OPEN ENDED TERMS	c. COSATI Field/Group
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II

REPORT

ON

CROSS LAKE

CAYUGA AND ONONDAGA COUNTIES

NEW YORK

EPA REGION II

WORKING PAPER No. 157

WITH THE COOPERATION OF THE

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

AND THE

NEW YORK NATIONAL GUARD

DECEMBER, 1974

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FOREWORD

The National Eutrophication Survey was initiated in 1972 in response to an Administration commitment to investigate the nationwide threat of accelerated eutrophication to fresh water lakes and reservoirs.

OBJECTIVES

The Survey was designed to develop, in conjunction with state environmental agencies, information on nutrient sources, concentrations, and impact on selected freshwater lakes as a basis for formulating comprehensive and coordinated national, regional, and state management practices relating to point-source discharge reduction and non-point source pollution abatement in lake watersheds.

ANALYTIC APPROACH

The mathematical and statistical procedures selected for the Survey's eutrophication analysis are based on related concepts that:

a. A generalized representation or model relating sources, concentrations, and impacts can be constructed.

b. By applying measurements of relevant parameters associated with lake degradation, the generalized model can be transformed into an operational representation of a lake, its drainage basin, and related nutrients.

c. With such a transformation, an assessment of the potential for eutrophication control can be made.

LAKE ANALYSIS

In this report, the first stage of evaluation of lake and watershed data collected from the study lake and its drainage basin is documented. The report is formatted to provide state environmental agencies with specific information for basin planning [§303(e)], water quality criteria/standards review [§303(c)], clean lakes [§314(a,b)], and water quality monitoring [§106 and §305(b)] activities mandated by the Federal Water Pollution Control Act Amendments of 1972.

Beyond the single lake analysis, broader based correlations between nutrient concentrations (and loading) and trophic condition are being made to advance the rationale and data base for refinement of nutrient water quality criteria for the Nation's fresh water lakes. Likewise, multivariate evaluations for the relationships between land use, nutrient export, and trophic condition, by lake class or use, are being developed to assist in the formulation of planning guidelines and policies by EPA and to augment plans implementation by the states.

ACKNOWLEDGMENT

The staff of the National Eutrophication Survey (Office of Research & Development, U. S. Environmental Protection Agency) expresses sincere appreciation to the New York State Department of Environmental Conservation for professional involvement and to the New York National Guard for conducting the tributary sampling phase of the Survey.

Henry L. Diamond, Commissioner of the New York Department of Environmental Conservation, and Leo J. Hetling, Director, and Italo G. Carcich, Senior Sanitary Engineer, Environmental Quality Research, Department of Environmental Conservation, provided invaluable lake documentation and counsel during the Survey.

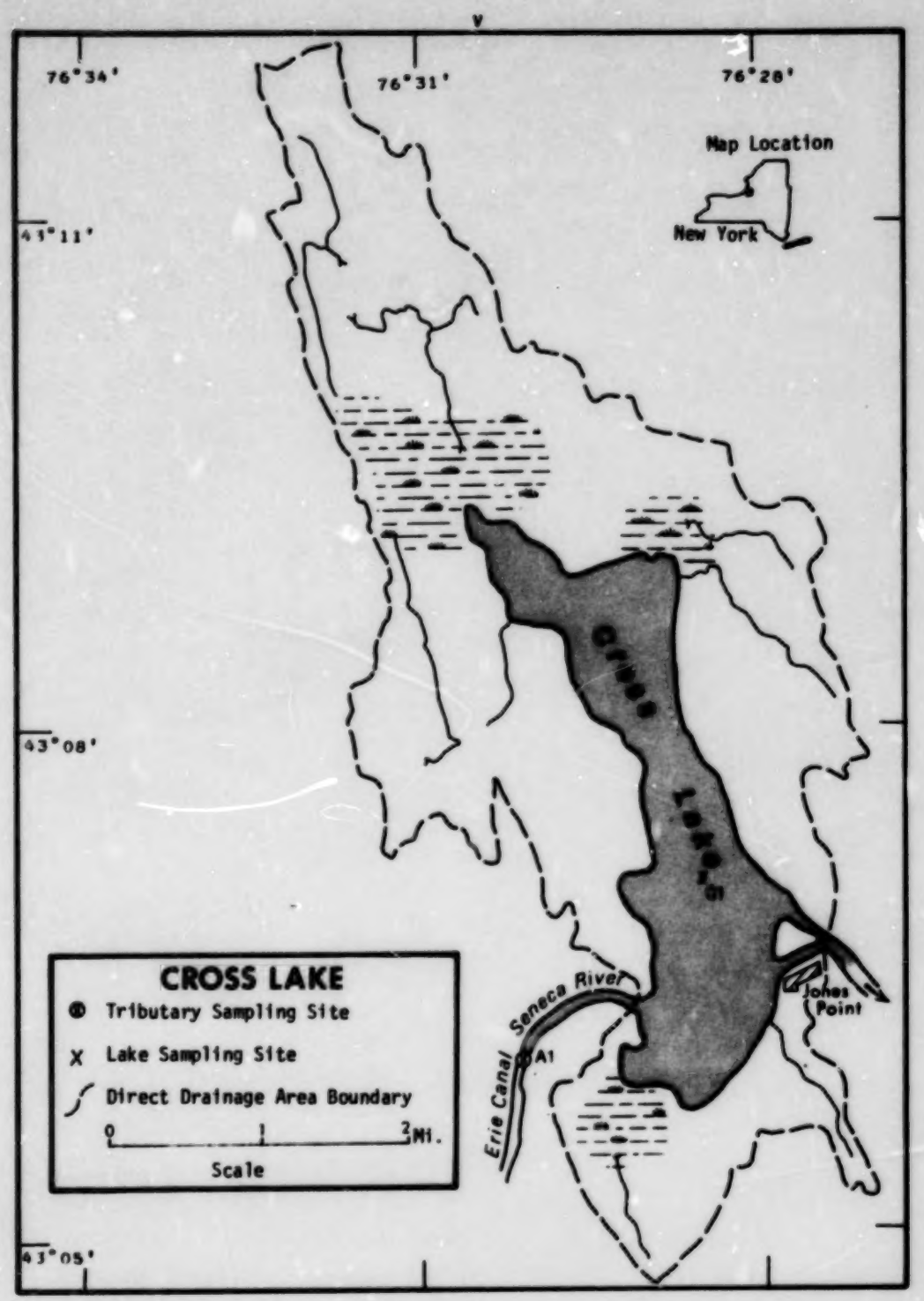
Major General John C. Baker, the Adjutant General of New York, and Project Officer Lieutenant Colonel Fred Peters, who directed the volunteer efforts of the New York National Guardsmen, are also gratefully acknowledged for their assistance to the Survey.

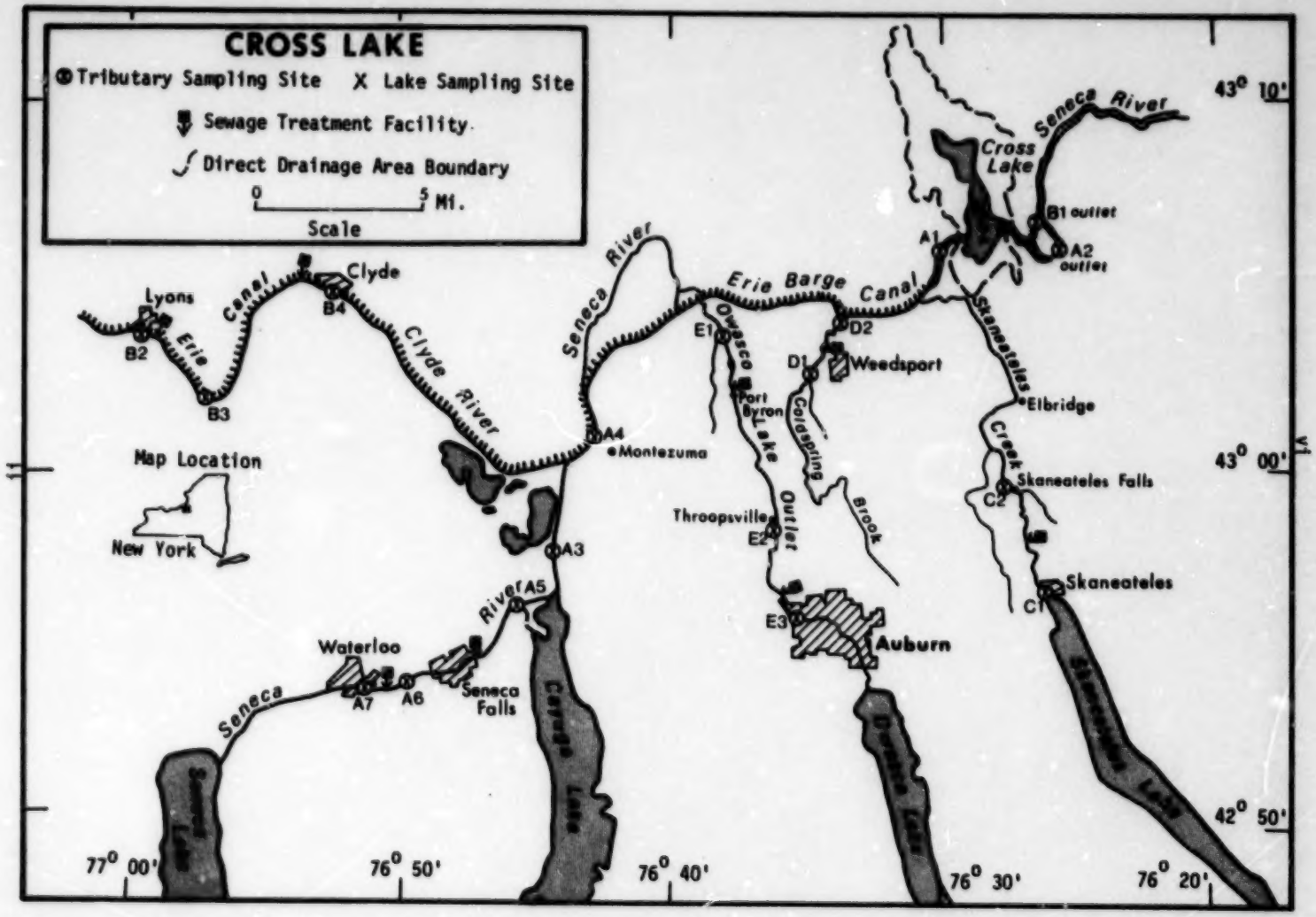
NATIONAL EUTROPHICATION SURVEY

STUDY LAKES

STATE OF NEW YORK

LAKE NAME	COUNTY
Allegheny Reservoir	Cattaraugas, NY; McLean, Warren, PA
Black	St. Lawrence
Canadaigua	Ontario
Cannonsville	Delaware
Carry Falls	St. Lawrence
Cassadaga	Chautauqua
Cayuga	Seneca, Tompkins
Champlain	Clinton, Essex, NY; Addison, Chittenden, Franklin, VT
Chautauqua	Chautauqua
Conesus	Livingston
Cross	Cayuga, Onondaga
Goodyear	Otsego
Huntington	Sullivan
Keuka	Ontario
Long	Hamilton
Lower St. Regis	Franklin
Otter	Cayuga
Owasco	Cayuga
Raquette Pond	Franklin
Round	Saratoga
Sacandaga Res.	Fulton, Saratoga
Saratoga	Saratoga
Schroon	Essex, Warren
Seneca	Seneca, Schyler, Yates
Swan	Sullivan
Swinging Bridge Res.	Sullivan


76°34'
76°31'
76°28'
41°11'
43°08'
43°05'
Map Location
New York
Cross Lake
Seneca River
Erie Canal
A1
Jones Point
CROSS LAKE
Tributary Sampling Site
Lake Sampling Site
Direct Drainage Area Boundary
0
1
2 Mi.
Scale


CROSS LAKE
Tributary Sampling Site
X Lake Sampling Site
Sewage Treatment Facility
Direct Drainage Area Boundary
0
5 Mi.
Scale
Map Location
New York
Lyons
Erie Canal
Clyde
B2
B3
B4
Clyde River
Seneca River
Erie Barge Canal
Cross Lake
B1 outlet
A1
A2 outlet
Skaneateles
Elbridge
E1
Owasco Outlet
D2
D1
Weedsport
Port Byron
Coldspring Brook
A4
Montezuma
Throopsville
E2
Lake
A3
River
A5
Waterloo
A7
A6
Seneca Falls
Seneca
Seneca Lake
Cayuga Lake
E3
Auburn
Owasco Lake
Creek
C2
Skaneateles Falls
C1
Skaneateles
Skaneateles Lake
43° 10'
43° 00'
42° 50'
77° 00'
76° 50'
76° 40'
76° 30'
76° 20'

CROSS LAKE

STORET NO. 3611

I. CONCLUSIONS

A. Trophic Condition:

Survey data indicate Cross Lake to be eutrophic. Of the 26 New York lakes sampled in the fall when essentially all were well-mixed, 21 had less mean total phosphorus levels, 24 had less mean dissolved phosphorus, and 21 had less mean inorganic nitrogen concentrations. For all data, 22 lakes had less mean chlorophyll a, and 21 nad greater Secchi disc transparency. Marked depression of dissolved oxygen with depth was observed in July, 1972.

Survey limnologists described the appearance of Cross Lake as fair during the May and July samplings but quite turbid during the October sampling; hydrogen sulfide was noted in the deeper samples during the July and October samplings.

B. Rate-Limiting Nutrient:

Algal assay results indicate Cross Lake was phosphorus limited at the time the assay sample was collected. The lake data also indicate phosphorus was limiting in October as well as in May. However, the data indicate nitrogen limitation during the July sampling. This kind of temporal shift in limiting nutrient has been observed in other lakes.

C. Nutrient Controllability:

1. Point sources--During the sampling year, Cross Lake received a total phosphorus load at a rate over ten times that proposed by Vollenweider (in press) as "dangerous"; i.e., a eutrophic rate (see page 14). Of this load, it is calculated that the eight known municipal waste treatment plants impacting the lake collectively contributed about 20%. However, even complete removal of phosphorus at the eight point sources studied would only reduce the loading rate to 26.8 g/m^2/year (more than eight times the eutrophic rate), and it is concluded that phosphorus control at these point sources would not appreciably improve the trophic condition of Cross Lake.

It appears that the extensive drainage area will ensure a eutrophic phosphorus loading rate to Cross Lake (see discussion following).

2. Non-point sources (see page 14)--During the sampling year, the phosphorus export of the Seneca River was somewhat high as compared to unimpacted streams studied elsewhere in New York and may, in part, have been due to point sources in the drainage beyond the 25-mile limit of the Survey*. However, even if the non-point phosphorus export had been quite low, the drainage area to lake area ratio of 911 to 1 would ensure an excessive phosphorus loading rate to Cross Lake.

* See Working Paper No. 1, "Survey Methods".

For example, the phosphorus export of unimpacted Big Hollow Creek (tributary to nearby Cayuga Lake) was a low 22 lbs per square mile of drainage area during the sampling year*. If the Seneca River export had been similarly low, the phosphorus loading rate to Cross Lake from non-point sources only would have been just over 3.5 $g/m^2/yr$ or in excess of Vollenweider's eutrophic rate of 3.2 $g/m^2/yr$.

In all, it is estimated that non-point sources contributed almost 80% of the total phosphorus load to the lake during the sampling year.

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* See Working Paper No. 153, "Report on Cayuga Lake".

II. LAKE AND DRAINAGE BASIN CHARACTERISTICS

A. Lake Morphometry†:

1. Surface area: 2,176 acres.
2. Mean depth: 18 feet.
3. Maximum depth: 55+ feet.
4. Volume: 40,000 acre/feet.
5. Mean hydraulic retention time: 7 days.

B. Tributary and Outlet:
(See Appendix A for flow data)

1. Tributaries -

Name	Drainage area*	Mean flow*
Seneca River	3,053.0 mi^2	2,951.2 cfs
Minor tributaries & immediate drainage -	44.6 mi^2	63.2 cfs
Totals	3,097.6 mi^2	3,014.4 cfs

2. Outlet -

Seneca River	3,101.0 mi^2**	3,014.4 cfs

C. Precipitation***:

1. Year of sampling: 52.2 inches.
2. Mean annual: 37.6 inches.

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† Martin and Hansen, 1966.
* Drainage areas are accurate within ±5%, except for small basins (±10%); mean daily flows are accurate within ±5 to 25%; and normalized mean monthly flows are accurate within ±15%.
** Includes area of lake.
*** See Working Paper No. 1.

III. LAKE WATER QUALITY SUMMARY

Cross Lake was sampled three times during the open-water season of 1972 by means of a pontoon-equipped Huey helicopter. Each time, samples for physical and chemical parameters were collected from one station on the lake and from a number of depths at the station (see map, page v). During each visit a single depth-integrated (15 feet to surface) sample was collected from the one station for phytoplankton identification and enumeration; and during the last visit, a single five-gallon depth-integrated sample was collected for algal assays. Also each time, a depth-integrated sample was collected for chlorophyll a analysis. The maximum depth sampled was 55 feet.

The results obtained are presented in full in Appendix B, and the data for the fall sampling period, when the lake was essentially well-mixed, are summarized below. Note, however, the Secchi disc summary is based on all values.

For differences in the various parameters at the other sampling times, refer to Appendix B.

A. Physical and chemical characteristics:

Parameter	Minimum	Mean	Median	Maximum
FALL VALUES (10/13/72)				
Temperature (Cent.)	13.2	13.9	14.1	14.2
Dissolved oxygen (mg/l)	8.6	8.7	8.8	8.8
Conductivity (µmhos)	685	699	700	725
pH (units)	7.8	7.9	7.9	7.9
Alkalinity (mg/l)	90	119	126	153
Total P (mg/l)	0.070	0.081	0.073	0.120
Dissolved P (mg/l)	0.038	0.045	0.040	0.067
NO_2 + NO_3 (mg/l)	0.220	0.383	0.340	0.690
Ammonia (mg/l)	0.240	0.258	0.255	0.280
ALL VALUES				
Secchi disc (inches)	28	53	60	72

B. Biological characteristics:

1. Phytoplankton -

Sampling Date	Dominant Genera	Number per ml
05/28/72	1. Asterionella	1,483
	2. Cyclotella	1,483
	3. Polycystis	434
	4. Melosira	289
	5. Scenedesmus	289
	Other genera	1,013
	Total	4,991
07/24/72	1. Dinobryon	904
	2. Flagellates	796
	3. Pediastrum	687
	4. Cryptomonas	633
	5. Scenedesmus	524
	Other genera	1,736
	Total	5,280
10/13/72	1. Stephanodiscus	1,386
	2. Dinobryon	602
	3. Cyclotella	316
	4. Cryptomonas	301
	5. Flagellates	226
	Other genera	1,055
	Total	3,886

2. Chlorophyll a -
(Because of instrumentation problems during the 1972 sampling, the following values may be in error by plus or minus 20 percent.)

Sampling Date	Station Number	Chlorophyll a (µg/l)
05/28/72	01	27.5
07/24/72	01	19.4
10/13/72	01	11.5

C. Limiting Nutrient Study:

1. Autoclaved, filtered, and nutrient spiked -

Spike (mg/l)	Ortho P Conc. (mg/l)	Inorganic N Conc. (mg/l)	Maximum yield (mg/l-dry wt.)
Control	0.011	0.682	3.2
0.010 P	0.021	0.682	7.4
0.020 P	0.031	0.682	8.8
0.050 P	0.061	0.682	16.2
0.050 P + 10.0 N	0.061	10.682	16.1
10.0 N	0.011	10.682	2.9

2. Filtered and nutrient spiked -

Spike (mg/l)	Ortho P Conc. (mg/l)	Inorganic N Conc. (mg/l)	Maximum yield (mg/l-dry wt.)
Control	0.033	0.760	6.5
0.010 P	0.043	0.760	8.0
0.020 P	0.053	0.760	9.1
0.050 P + 5.0 N	0.083	5.760	17.5
0.050 P + 10.0 N	0.083	10.760	17.3
10.0 N	0.033	10.760	5.1

3. Discussion -

The control yield of the assay alga, Selenastrum capricornutum, indicates that the potential primary productivity of Cross Lake was moderately high at the time the assay sample was collected. Also, the increased yields with increased levels of orthophosphorus show that Cross Lake was phosphorus limited. Note that the addition of only nitrogen produced a yield no greater than the control yield but that nitrogen and phosphorus together resulted in a significant increase in yield.

The lake data for the May and October samples also indicate that the lake was phosphorus limited (i.e., the nitrogen to phosphorus ratios were greater than 14 to 1). However, the July nitrogen to phosphorus ratio was less than 8 to 1, and nitrogen limitation would be expected.

IV. NUTRIENT LOADINGS
(See Appendix C for data)

For the determination of nutrient loadings, the New York National Guard collected monthly near-surface grab samples from each of the tributary sites indicated on the map (page vi), except for the high runoff months of April and May when two samples were collected. Sampling was begun in November, 1972, and was completed in October, 1973.

Through an interagency agreement, stream flow estimates for the year of sampling and a "normalized" or average year were provided by the New York District Office of the U.S. Geological Survey for the tributary sites nearest the lake.

In this report, nutrient loads for sampled tributaries were determined by using a modification of a U.S. Geological Survey computer program for calculating stream loadings*. Nutrient loadings for unsampled "minor tributaries and immediate drainage" ("ZZ" of U.S.G.S.) were estimated by using the means of the nutrient loads, in $lbs/mi^2/year$, of unimpacted tributaries of nearby Cayuga Lake** at stations 3608B-1, F-1, M-1, and Q-1 and multiplying the means by the ZZ area in mi^2.

The operators of the Auburn, Clyde, Lyons, Port Byron, Seneca Falls, Willow Glen, and Weedsport wastewater treatment plants provided monthly effluent samples and corresponding flow data. However, the Village of Waterloo did not participate in the Survey, and nutrient loads there were

* See Working Paper No. 1.
** See Working Paper No. 153.

estimated at 2.5 lbs P and 7.5 lbs N/capita/year. It is assumed that all of the point-source loads reached Cross Lake during the sampling year.

The nutrient loads attributed to the Seneca River are those measured at station A-1 minus the point-source loads.

A. Waste Sources:

1. Known municipal -

Name	Pop. Served*	Treatment	Mean Flow (mgd)	Receiving Water
Auburn	34,599	prim.	10.641	Owasco L. outlet
Clyde	2,828	cont. stab.	0.201	Clyde River
Lyons	4,496	cont. stab. + pond	0.577	Clyde River
Port Byron	1,330	cont. stab.	0.053	Owasco L. outlet
Seneca Falls	7,794	cont. stab.	1.031	Seneca River
Skaneateles (Willow Glen)	2,921	Imhoff	0.500	Skaneateles Creek
Waterloo	5,410	trickling	0.541**	Seneca River
Weedsport	1,900	cont. stab.	0.251	Coldspring Brook

2. Known industrial - None

* 1970 Census.
** Estimated at 100 gal/capita/day.

B. Annual Total Phosphorus Loading - Average Year:

1. Inputs -

Source	lbs P/ yr	% of total
a. Tributaries (non-point load) -		
Seneca River	517,310	79.5
b. Minor tributaries & immediate drainage (non-point load) -	3,010	0.5
c. Known municipal STP's -		
Auburn	83,460	12.8
Clyde	3,580	0.5
Lyons	8,310	1.3
Port Byron	960	0.1
Seneca Falls	10,670	1.6
Waterloo	13,520	2.1
Weedsport	1,600	0.2
Skaneatales (Willow Glen)	8,100	1.2
d. Septic tanks* -	100	<0.1
e. Known industrial - None	-	-
f. Direct precipitation** -	340	0.1
Total	650,960	100.0

2. Outputs -

Lake outlet - Seneca River 503,570

3. Net annual P accumulation - 147,390 pounds

* Based on 153 shoreline dwellings; see Working Paper No. 1.
** See Working Paper No. 1.

C. Annual Total Nitrogen Loading - Average Year:

1. Inputs -

Source	lbs N/ yr	% of total
a. Tributaries (non-point load) -		
Seneca River	8,951,220	91.6
b. Minor tributaries & immediate drainage (non-point load) -	120,800	1.2
c. Known municipal STP's -		
Auburn	484,780	5.0
Clyde	7,930	0.1
Lyons	25,440	0.3
Port Byron	5,170	0.1
Seneca Falls	60,680	0.6
Waterloo	40,580	0.4
Weedsport	6,120	0.1
Skaneatales (Willow Glen)	39,630	0.4
d. Septic tanks* -	3,600	<0.1
e. Known industrial - None	-	-
f. Direct precipitation** -	20,960	0.2
Total	9,766,910	100.0

2. Outputs -

Lake outlet - Seneca River 8,747,840

3. Net annual N accumulation - 1,019,070 pounds

* Based on 153 shoreline dwellings; see Working Paper No. 1.
** See Working Paper No. 1.

D. Mean Annual Non-point Nutrient Export by Subdrainage Area:

Tributary	lbs P/mi^2/yr	lbs N/mi^2/yr
Seneca River	169	2,932

E. Yearly Loading Rates:

In the following table, the existing phosphorus loading rates are compared to those proposed by Vollenweider (in press). Essentially, his "dangerous" rate is the rate at which the receiving waters would become eutrophic or remain eutrophic; his "permissible" rate is that which would result in the receiving water remaining oligotrophic or becoming oligotrophic if morphometry permitted. A mesotrophic rate would be considered one between "dangerous" and "permissible".

	Total Phosphorus		Total Nitrogen	
Units	Total	Accumulated	Total	Accumulated
lbs/acre/yr	299.2	67.7	4,488.5	468.3
grams/m^2/yr	33.53	7.59	503.1	52.5

Vollenweider loading rates for phosphorus (g/m^2/yr) based on mean depth and mean hydraulic retention time of Cross Lake:

"Dangerous" (eutrophic rate)	3.20
"Permissible" (oligotrophic rate)	1.60

V. LITERATURE REVIEWED

Greeson, Phillip E. and F. Lumen Robinson, 1970. Characteristics of New York lakes. Part 1: Gazetteer of lakes, ponds, and reservoirs. U.S. Dept. of Int. and NY Dept. Env. Cons.

Vollenweider, Richard A., (in press). Input-output models. Schweiz. A. Hydrol

VII. APPENDICES

APPENDIX A

TRIBUTARY FLOW DATA

TRIBUTARY FLOW INFORMATION FOR NEW YORK 11/26/74

LAKE CODE 3611 CROSS LAKE

TOTAL DRAINAGE AREA OF LAKE 3101.00

TRIBUTARY	SUB-DRAINAGE AREA	NORMALIZED FLOWS JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	MEAN
3611A1	1053.00	3240.00	3350.00	6050.00	5790.00	3810.00	2300.00	1610.00	1390.00	1310.00	1550.00	2080.00	3040.00	2951.21
3611A2	3101.00	3320.00	3440.00	6140.00	5890.00	3890.00	2360.00	1650.00	1410.00	1330.00	1580.00	2060.00	3110.00	3014.36
3611ZZ	48.00	80.00	90.00	110.00	100.00	80.00	60.00	40.00	20.00	20.00	30.00	60.00	70.00	63.15

SUMMARY

TOTAL DRAINAGE AREA OF LAKE = 3101.00
SUM OF SUB-DRAINAGE AREAS = 3101.00

TOTAL FLOW IN = 36280.00
TOTAL FLOW OUT = 36280.00

MEAN MONTHLY FLOWS AND DAILY FLOWS

TRIBUTARY	MONTH	YEAR	MEAN FLOW	DAY	FLOW	DAY	FLOW	DAY	FLOW
3611A1	11	72	6280.00	5	3200.00				
	12	72	8720.00	3	7740.00				
	1	73	7420.00	6	9600.00				
	2	73	6060.00	4	7800.00				
	3	73	6170.00	4	3030.00				
	4	73	7830.00	20	5700.00	26	4260.00		
	5	73	4590.00	13	4800.00	17	4450.00	31	4750.00
	7	73	1060.00	31	1160.00				
	8	73	1070.00	16	1790.00				
	9	73	1200.00	23	1080.00				
	10	73	1210.00	13	1030.00				
3611A2	11	72	6400.00	5	3380.00				
	12	72	8910.00	3	7940.00				
	1	73	7600.00	6	9820.00				
	2	73	6230.00	4	8000.00				
	3	73	6270.00	4	3070.00				
	4	73	7950.00	20	5800.00	26	4330.00		
	5	73	4700.00	13	4920.00	17	4550.00	31	4860.00
	7	73	1100.00	31	1180.00				
	8	73	1090.00	16	1820.00				
	9	73	1210.00	23	1090.00				
	10	73	1240.00	13	1050.00				
3611ZZ	11	72	150.00						
	12	72	210.00						
	1	73	180.00						
	2	73	170.00						
	3	73	130.00						
	4	73	190.00						
	5	73	110.00						
	7	73	34.00						
	8	73	20.00						
	9	73	6.70						
	10	73	30.00						

APPENDIX B

PHYSICAL and CHEMICAL DATA

STORET RETRIEVAL DATE 74/11/26

361101
43 07 13.0 076 28 31.0
CROSS LAKE
36 NEW YORK

11EPALES
3

2111202
0020 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00010 WATER TEMP CENT	00300 DO MG/L	00077 TRANSP SECCHI INCHES	00094 CNDUCTVY FIELD MICROMHO	00400 PH SU	00410 T ALK CACO3 MG/L	00630 NO2&NO3 N-TOTAL MG/L	00610 NH3-N TOTAL MG/L	00665 PHOS-TOT MG/L P	00666 PHOS-DIS MG/L P
72/05/28	11 50	0000	19.4	12.9	72	650	8.70	132	0.240	0.070	0.042	0.013
	11 50	0005	17.5	13.4		650	8.70	135	0.230	0.060	0.072	0.021
	11 50	0015	16.4	10.2		650	8.00	133	0.410	0.070	0.053	0.020
72/07/24	17 00	0000	27.1		60	560	8.40	113	0.290	0.090	0.079	0.044
	17 00	0004		9.0		560	8.40	116	0.300	0.080	0.085	0.047
	17 00	0015	26.3	6.4		560	8.10	113	0.350	0.150	0.090	0.061
	17 00	0040	15.6	0.1		550	7.60	135	0.420	0.910	0.198	0.174
	17 00	0055	11.8	0.1		600	7.50	159	0.060	2.360	0.680	0.500
72/10/13	15 50	0000			28	700	7.90	91	0.230	0.240	0.071	0.038
	15 50	0004	14.2	8.8		725	7.90	90	0.230	0.260	0.075	0.039
	15 50	0015	14.2	8.8		700	7.90	129	0.220	0.250	0.071	0.038
	15 50	0025	14.1	8.8		685	7.90	122	0.450	0.280	0.070	0.041
	15 50	0035	14.0	8.7		685	7.90	129	0.480	0.250	0.078	0.045
	15 50	0046	13.2	8.6		700	7.85	153	0.690	0.270	0.120	0.067

DATE FROM TO	TIME OF DAY	DEPTH FEET	32217 CHLRPHYL A UG/L
72/05/28	11 50	0000	27.5J
72/07/24	17 00	0000	19.4J
72/10/13	15 50	0000	11.5J

J VALUE KNOWN TO BE IN ERROR

APPENDIX C

TRIBUTARY and WASTEWATER TREATMENT PLANT DATA

STORET RETRIEVAL DATE 74/11/26

3611A1 LS3611A1
43 36 00.0 076 39 00.0
SENECA RIVER (ERIE CANAL)
36 15 BALDWINSVILLE
I/CROSS LAKE
JORDAN RD BRDG NW OF JORDAN
11EPALES 2111204
4 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P
72/11/05	10 20		0.790	0.850	0.220	0.078	0.147
72/12/03	10 00		0.680	0.480	0.052	0.019	0.054
73/01/06	10 00		0.800	0.470	0.042	0.025	0.054
73/02/04	10 00		1.400	0.480	0.078	0.027	0.065
73/03/04	10 15		0.860	0.360	0.084	0.023	0.055
73/04/20	09 30		0.580	2.200	0.096	0.024	0.090
73/04/26	09 25		0.490	0.920	0.080	0.025	0.090
73/05/13			0.450	1.890	0.058	0.032	0.110
73/05/17	11 30		0.450	1.150	0.037	0.031	0.105
73/05/31	11 30		0.470	0.920	0.031	0.027	0.105
73/07/31	10 30		0.180	2.730	0.052	0.110	0.330
73/08/16	13 00		0.110	1.500	0.032	0.069	0.185
73/09/23	10 50		0.500	0.660	0.086	0.044	0.095
73/10/13	09 10		0.013	0.520	0.038	0.006	0.045

21

STORET RETRIEVAL DATE 74/11/26

361142 LS361142
43 06 00.0 076 25 30.0
SENECA RIVER (ERIE CANAL)
36 15 BALDWINSVILLE
O/CROSS LAKE
PLAINVILLE RD BRDG IN JACKS REEF
11EPALES 2111204
4 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P
72/11/05	11 05		0.700	0.700	0.154	0.046	0.100
72/12/03	10 30		0.780	0.560	0.048	0.025	0.054
73/01/06	09 15		0.820	0.675	0.069	0.026	0.050
73/02/04	11 00		0.810	0.440	0.090	0.027	0.050
73/03/04	10 50		0.870	0.630	0.075	0.020	0.055
73/04/26	09 35		0.500	1.050	0.038	0.015	0.080
73/05/13	10 30		0.440	0.750	0.042	0.030	0.085
73/05/17	10 30		0.450	0.850	0.042	0.028	0.090
73/05/31	10 30		0.460	1.260	0.058	0.026	0.080
73/07/31	11 00		0.036	2.000	0.033	0.071	0.220
73/08/16	13 00		0.038	1.900		0.030	0.090
73/10/13	08 30		0.010K	0.700	0.038	0.007	0.040

K VALUE KNOWN TO BE
LESS THAN INDICATED

STORET RETRIEVAL DATE 74/11/26

3611A3
42 5A 00.0 076 44 30.0
SENECA RIVER (ERIE CANAL)
36 15 AUBURN
T/CROSS LAKE
US HWY 20 BRDG ABOV CAYUGA VALLEY STP
11EPALES 2111204
4 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P
72/11/05	14 45		0.720	0.750	0.176	0.056	0.110
72/12/04	10 30		0.950	0.170	0.030	0.005K	0.007
73/01/06	13 30		1.080	0.470	0.090	0.039	0.097
73/02/04	12 00		1.420	0.500	0.094	0.025	0.070
73/03/04	11 30		1.060	0.850	0.210	0.034	0.115
73/04/19	10 55		0.550	2.100	0.150	0.011	0.040
73/04/26	10 30		0.430	0.750	0.093	0.010	0.035
73/05/13			0.500	1.540	0.054	0.010	0.030
73/05/17	09 30		0.490	0.500	0.026	0.009	0.030
73/05/31	09 30		0.520	0.500	0.026	0.005K	0.030
73/07/31	11 30		0.069	0.730	0.110	0.009	0.035
73/08/14	10 00		0.069	1.180	0.180	0.016	0.035
73/09/23	12 00		0.520	1.000	0.150	0.044	0.095
73/10/13	08 10		0.126	1.100	0.160	0.054	0.060

K VALUE KNOWN TO BE
LESS THAN INDICATED

STORET RETRIEVAL DATE 74/11/26

3611A4 LS3611A4
43 01 00.0 076 42 30.0
SENECA RIVER
36 15 WEEDSPORT
T/CROSS LAKE
ST HWY 31 BRDG BELO CAYUGA VALLEY STP
11EPALES 2111204
4 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P
72/11/04	10 00		0.720	0.900	0.231	0.080	0.154
72/12/03			0.900	0.420	0.050	0.035	0.054
73/01/06	14 45		1.040	0.540	0.078	0.042	0.110
73/02/04	09 15		1.080	0.460	0.084	0.022	0.060
73/03/04	11 00		1.420	1.150	0.105	0.024	0.210
73/04/20	10 40		0.610	3.000	0.091	0.019	0.070
73/04/26	10 20		0.490	1.000	0.086	0.018	0.075
73/05/13	14 00		0.480	0.930	0.017	0.024	0.085
73/05/17	14 00		0.480	0.800	0.013	0.025	0.080
73/05/31	14 00		0.500	0.730	0.017	0.022	0.090
73/07/31	11 00		0.198	2.500	0.037	0.088	0.330
73/08/16	12 00		0.176	1.300	0.096	0.050	0.135
73/10/13	08 50		0.330	0.890	0.086	0.019	0.095

24

STORET RETRIEVAL DATE 74/11/26

3611A5 360BN1
42 56 30.0 076 45 30.0
SENECA RIVER
36 7.5 SENECA FALLS
T/CROSS LAKE
ST HWY 89 BELO SENECA FALLS STP
11EPALES 2111204
4 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P
72/11/04	12 30		0.550	1.600	0.730	0.039	0.160
72/12/03	09 15		0.440	0.735	0.357	0.037	0.075
72/12/17	10 05		1.040	0.290	0.048	0.026	0.044
73/01/06	10 15		0.440	0.490	0.150	0.013	0.024
73/02/04	10 30		0.740	0.630	0.220	0.032	0.100
73/03/04	11 00		0.580	0.890	0.300	0.011	0.075
73/04/19	16 00		0.370	1.150	0.220	0.014	0.035
73/04/26	10 35		0.320	1.060	0.160	0.012	0.035
73/05/13	10 00		0.310	1.200	0.115	0.015	0.050
73/05/31	10 00		0.320	0.500	0.115	0.016	0.045
73/07/31	11 30		0.126	1.380	0.350	0.028	0.065
73/08/16	13 30		0.075	1.400	0.390	0.027	0.055
73/10/13	09 40		0.294	1.050	0.480	0.027	0.030

25

STORET RETRIEVAL DATE 74/11/26

3611A6 LS3611A6
42 54 30.0 076 49 30.0
SENECA RIVER
36 7.5 SENECA FALLS
T/CROSS LAKE
KINGDOM BROG ABOVE SENECA FALLS STP
11EPALES 2111204
4 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P
72/11/04	16 45		0.970	1.850	0.690	0.018	0.230
72/12/02	15 40		0.540	1.015	0.315	0.027	0.066
73/01/06	12 00		0.420	0.330	0.126	0.010	0.028
73/02/04	14 45		0.540	0.330	0.046	0.026	0.055
73/03/04	08 00		1.240	1.320	0.294	0.050	0.200
73/04/07	14 30		0.460	0.390	0.115	0.011	0.035
73/04/22	08 00		0.330	0.300	0.024	0.009	0.020
73/05/05	20 15		0.378	0.340	0.028	0.006	0.030
73/05/20	19 52		0.294	1.470	0.890	0.033	0.060
73/06/03	14 30		0.310	1.380	0.273	0.025	0.063
73/07/29	14 10		0.094	0.900	0.069	0.013	0.040
73/08/22				0.750	0.063	0.012	0.035
73/09/09	14 10		0.082	1.380	0.800	0.013	0.020
73/10/06			0.105	0.860	0.092	0.006	0.060

STORET RETRIEVAL DATE 74/11/26

3611A7 LS3611A7
42 54 00.0 076 51 00.0
SENECA RIVER
36 15 SENECA FALLS
T/CROSS LAKE
LGT DUTY RD BRDG ABOV WATERLOO STP
11EPALES 2111204
4 0000 FFET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P
72/11/04	17 00		1.100	2.000	0.900	0.029	0.240
72/12/02	15 45		0.370	0.360	0.037	0.008	0.023
73/01/06	12 15		0.410	0.230	0.042	0.019	0.031
73/02/04	13 10		0.520	0.520	0.040	0.024	0.045
73/03/04	07 35		1.250	1.050	0.138	0.060	0.180
73/04/07	15 14		0.440	0.290	0.020	0.012	0.035
73/04/22	08 30		0.330	0.965	0.044	0.009	0.025
73/05/05	20 30		0.370	0.360	0.024	0.005K	0.030
73/05/20	19 45		0.315	0.420	0.019	0.008	0.030
73/06/03	14 00		0.290	0.640	0.039	0.014	0.070
73/08/22				0.400	0.056	0.013	0.025
73/09/09	15 15		0.035	1.050	0.082	0.015	0.020
73/10/04			0.195	3.450	0.092	0.005K	0.032

K VALUE KNOWN TO BE
LESS THAN INDICATED

27

STORET RETRIEVAL DATE 74/11/26

361181 LS361181
43 07 00.0 076 26 30.0
ERIE CANAL
36 15 BALDWINSVILLE
O/CROSS LAKE
PLAINVILLE RD BRDG
11EPALES 2111204
4 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P
72/11/05	10 55		0.740	0.875	0.180	0.056	0.120
72/12/03	10 20		0.880	0.580	0.063	0.026	0.058
	14 06		0.240	0.370	0.083	0.049	0.083
73/01/06	09 30		0.850	0.580	0.060	0.023	0.048
73/02/03	10 30		0.580	0.600	0.096	0.006	0.090
73/03/04	11 30		1.120	1.310	0.198	0.042	0.220
73/04/20	10 00		0.570	1.700	0.090	0.015	0.070
73/04/26	09 40		0.460	1.050	0.058	0.018	0.095
73/05/13	10 45		0.460	0.700	0.044	0.044	0.095
73/05/17	10 45		0.460	1.150	0.048	0.044	0.097
73/05/31	14 45		0.480	0.840	0.054	0.042	0.095
73/07/31	11 00		0.035	3.200	0.111	0.118	0.360
73/08/16	10 00		0.010K	1.260	0.026	0.037	0.120
73/09/23	10 15		0.220	0.860	0.036	0.015	0.085
73/10/13	09 30		0.120	0.750	0.160	0.007	0.007

K VALUE KNOWN TO BE
LESS THAN INDICATED

28

STORET RETRIEVAL DATE 74/11/26

361142 LS361142
43 03 30.0 076 59 10.0
ERIE CANAL
36 15 CLYDE
T/CROSS LAKE
ST HWY 14 BRDG ABOVE LYONS STP
11EPALES 2111204
4 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P
72/11/05	09 30		0.960	0.850	0.210	0.120	0.189
72/12/02	14 30		1.400	0.670	0.096	0.068	0.110
73/01/06	13 45		1.300	0.390	0.056	0.037	0.066
73/02/04	11 45		1.260	0.740	0.094	0.050	0.170
73/03/04	11 15		1.420	1.540	0.176	0.074	0.290
73/04/07	11 30		1.040	0.690	0.038	0.040	0.110
73/04/21	12 00		0.840	0.720	0.033	0.039	0.095
73/05/05	11 00		0.830	0.840	0.067	0.066	0.125
73/05/19	10 00		0.770	0.630	0.034	0.060	0.110
73/06/03	14 30		0.530	0.880	0.021	0.094	0.145
73/08/22	10 00			2.400	0.168	0.126	0.200
73/09/04	09 30		0.650	1.260	0.138	0.110	0.185
73/10/06	10 05		0.740	0.520	0.064	0.089	0.170

STORET RETRIEVAL DATE 74/11/26

361183 LS361183
43 02 00.0 076 57 00.0
ERIE CANAL
36 15 CLYDE
T/CROSS LAKE
CREAGER BRDG SE OF LYONS BELO STP
11EPALES 2111204
4 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P
72/11/05			1.000	0.800	0.175	0.110	0.180
72/12/02	15 00		1.520	0.750	0.082	0.060	0.094
73/01/06	14 45		1.340	0.460	0.084	0.044	0.078
73/02/04	12 45		1.360	1.300	0.100	0.048	0.180
73/03/04	12 15		1.380	0.980	0.154	0.075	0.185
73/04/07	13 30		1.060	0.690	0.040	0.042	0.120
73/04/21	11 00		0.780	0.750	0.023	0.042	0.100
73/05/05	09 30		0.950	0.930	0.084	0.061	0.115
73/05/19	11 30		0.740	0.630	0.030	0.071	0.115
73/06/03	15 30		0.110	0.560	0.017	0.020	0.050
73/07/29	13 30		0.490	1.150	0.005K	0.075	0.210
73/08/22	10 10			3.200	0.230	0.140	0.230
73/10/06	10 50		0.790	0.660	0.160	0.091	0.185

K VALUE KNOWN TO BE
LESS THAN INDICATED

STORET RETRIEVAL DATE 74/11/26

361184 L5361184
43 01 00.0 076 48 00.0
ERIE CANAL
36 15 CLYDE
T/CROSS LAKE
ST HWY 414 BRDG BELO CLYDE STP
11EPALFS 2111204
4 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P
72/11/05	11 00		0.800	0.850	0.200	0.100	0.180
72/12/07	11 00		1.340	0.580	0.096	0.054	0.088
73/01/06	09 55		1.010	0.330	0.034	0.008	0.023
73/02/04	09 00		1.200	0.720	0.098	0.048	0.120
73/03/04	14 15		1.280	0.720	0.180	0.089	0.165
73/04/19	16 00		0.840	2.100	0.110	0.037	0.105
73/04/26	10 55		0.700	0.830	0.033	0.052	0.115
73/05/13	11 50		0.600	1.050	0.058	0.072	0.155
73/05/17	10 30		0.590	1.680	0.300	0.070	0.160
73/05/31	10 30		0.600	1.150	0.038	0.073	0.155
73/07/31	12 00		0.360	1.000	0.035	0.075	0.180
73/09/23	09 50		0.830	0.810	0.147	0.110	0.150
73/10/13	09 30		0.300	1.080	0.470	0.026	0.030

STORET RETRIEVAL DATE 74/11/26

3611C1 LS3611C1
42 56 30.0 076 26 00.0
SKANEATLES CREEK
36 15 SKANEATLES
T/CROSS LAKE
US HWY 20 BRDG ABOV SKANEATLES STP
11EPALES 2111204
4 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P
72/11/05	09 30		0.580	0.150	0.075	0.005K	0.006
73/01/06	12 00		0.580	0.170	0.014	0.005K	0.006
73/02/04	09 00		0.510	0.100K	0.031	0.007	0.010
73/03/04	10 00		0.620	0.100K	0.016	0.005K	0.005
73/04/26	14 00		0.540	0.200	0.005K	0.005K	0.005K
73/05/13	14 30		0.540	0.540	0.024	0.006	0.010
73/05/31	14 30		0.540	0.540	0.022	0.010	0.010
73/07/31	13 00		0.450	0.420	0.030	0.005K	0.010
73/08/16	14 00		0.450	0.230	0.009	0.005K	0.005K
73/09/23	09 30		0.410	0.810	0.044	0.014	0.015
73/10/13	11 45		0.410	0.270	0.022	0.005K	0.005K

K VALUE KNOWN TO BE
LESS THAN INDICATED

STORET RETRIEVAL DATE 74/11/26

3611C2 LS3611C2
42 59 30.0 076 27 30.0
SKANEATLES CREEK
36 15 SKANEATLES
T/CROSS LAKE
DEPOT RD BRDG BELO SKANEATLEE FALLS STP
11EPALFS 2111204
4 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P
72/11/05	09 50		0.760	0.650	0.126	0.160	0.270
72/12/03	09 44		0.570	0.270	0.035	0.028	0.063
73/01/04	12 00		0.580	0.440	0.138	0.058	0.088
73/02/04	09 45		0.600	0.170	0.052	0.013	0.030
73/03/04	10 05		0.910	0.520	0.120	0.044	0.100
73/04/20	08 30		0.550	1.600	0.078	0.051	0.087
73/04/26	14 00		0.640	0.960	0.027	0.220	0.370
73/05/13	15 00		0.540	0.710	0.050	0.010	0.010
73/05/17	15 40		0.530	0.240	0.015	0.005K	0.010
73/05/31	15 00		0.550	0.320	0.022	0.005K	0.010
73/07/31	13 00		0.830	1.260	0.154		
73/08/16	13 30		0.870	0.830	0.058	0.480	0.710
73/09/23	09 45		0.460	0.170	0.023	0.005K	0.010
73/10/13	11 55		0.410	0.460	0.012	0.005K	0.005K

K VALUE KNOWN TO BE
LESS THAN INDICATED

33

STORET RETRIEVAL DATE 74/11/26

361101 LS361101
43 02 30.0 076 34 30.0
COLDSPRING BROOK
36 15 WEEDSPORT
T/CROSS LAKE
ST HWY 30 BRDG ABOV WEEPSPORT STP
11EPALES 2111204
4 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P
72/11/05	11 15		0.392	0.600	0.105	0.052	0.094
73/01/06	11 00		1.820	0.480	0.068	0.018	0.040
73/02/04			0.790	0.870	0.105	0.024	0.065
73/03/04	14 00		1.020	0.280	0.021	0.012	0.030
73/04/20	10 15		1.200	1.680	0.100	0.021	0.030
73/04/26	10 00		1.180	0.520	0.025	0.009	0.020
73/05/13	12 00		0.440	2.100	0.061	0.022	0.085
73/05/17	12 00		0.450	0.970	0.048	0.022	0.085
73/07/31	11 00		0.870	1.470	0.058	0.034	0.095
73/08/16	13 00		0.730	1.400	0.054	0.039	0.148
73/09/23	11 30		0.730	0.480	0.044	0.017	0.042
73/10/13	10 15		0.340	0.940	0.078	0.005K	0.100

K VALUE KNOWN TO BE
LESS THAN INDICATED

34

STORET RETRIEVAL DATE 74/11/26

361102 LS361102
43 04 00.0 076 33 30.0
COLDSPRING BROOK
36 15 WEEDSPORT
T/CROSS LAKE
BRDG .3 MI N OF US 90 HELO WEEDSPORT STP
11EPALES 2111204
0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P
72/11/05	13 00		0.760	0.925	0.189	0.072	0.140
72/12/03	11 00		0.790	0.480	0.023	0.020	0.050
73/01/06	10 30		0.840	0.390	0.052	0.025	0.052
73/02/04	11 00		0.840	0.690	0.110	0.033	0.085
73/03/04	11 00		1.020	0.760	0.160	0.038	0.140
73/04/20	10 10		0.580	2.125	0.088	0.021	0.090
73/04/26	09 55		0.480	0.890	0.070	0.027	0.105
73/05/13	12 30		1.300	1.000	0.034	0.027	0.105
73/05/17	12 30		1.300	0.920	0.030	0.027	0.110
73/05/31	12 30		1.360	1.000	0.042	0.024	0.105
73/07/31	10 00		0.176	1.600	0.050	0.069	0.195
73/08/16	09 00		0.110	1.150	0.018	0.054	0.145
73/09/23	11 15		0.450	0.680	0.084	0.044	0.100
73/10/13	09 40		0.340	1.050	0.082	0.024	0.110

35

STORET RETRIEVAL DATE 74/11/26

3611E1 LS3611E1
43 04 00.0 076 38 00.0
OWASCO LAKE OUTLET
36 15 WEEDSPORT
T/CROSS LAKE
ST HWY 38 BRDG BELO PORT BYRON STP
11EPALES 2111204
4 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P
72/11/05	13	15	1.000	0.500	0.138	0.056	0.097
72/12/03	09	30	0.880	0.460	0.024	0.028	0.058
73/01/06	10	00	1.100	1.300	0.100	0.075	0.176
73/02/04	09	00	1.040	0.450	0.069	0.028	0.065
73/03/04	10	20	1.100	1.760	0.120	0.044	0.105
73/04/20	10	30	1.000	1.760	0.120	0.048	0.090
73/04/26	10	10	1.340	1.760	0.470	0.250	0.420
73/05/13	13	00	1.100	1.000	0.180	0.176	0.240
73/05/17	13	00	1.100	0.880	0.173	0.178	0.240
73/05/31			1.140	1.100	0.198	0.176	0.240
73/07/31	10	15	2.200	1.380	0.210	0.980	1.150
73/08/16	11	00	2.400	1.050	0.091	0.690	0.760
73/09/23	12	30	2.900	1.150	0.470	0.600	0.740
73/10/13	12	00	0.410	0.460	0.011	0.039	

36

STORET RETRIEVAL DATE 74/11/26

3611E2 LS3611E2
42 58 30.0 076 32 00.0
OWASCO LAKE OUTLET
36 15 AUBURN
T/CROSS LAKE
THROOP TURNPIKE BRDG BELO AUBURN STP
11EPALES 2111204
4 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P
72/11/05	09 45		0.940	0.850	0.147	0.040	0.076
72/12/03	09 35		0.940	0.560	0.038	0.024	0.062
73/01/06	11 00		1.040	0.550	0.083	0.044	0.110
73/02/04	09 45		1.400	0.520	0.077	0.025	0.055
73/03/04	10 00		1.100	0.840	0.126	0.042	0.090
73/04/20	11 00		0.950	0.900	0.060	0.032	0.060
73/04/26	12 35		1.000	1.200	0.231	0.160	0.240
73/05/13	13 30		0.740	2.000	0.610	0.252	0.360
73/05/17	13 30		0.740	1.800	0.590	0.252	0.375
73/05/31	13 30		0.820	1.610	0.560	0.220	0.310
73/07/31	10 30		1.560	3.600	2.450	1.040	1.200
73/08/16	09 50		0.336	5.250	3.400	1.200	1.450

STORET RETRIEVAL DATE 74/11/26

3611E3 LS3611E3
42 56 00.0 076 35 30.0
OWASCO LAKE OUTLET
36 15 AUBURN
T/CROSS LAKE
ST HWY 5 BROG ABOV AUBURN STP
11EPALES 2111204
4 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P
72/11/05	15	00	0.938	0.300	0.060	0.018	0.063
72/12/03	13	10	0.920	0.330	0.021	0.013	0.042
73/01/06	12	30	1.060	0.570	0.077	0.039	0.100
73/02/04	10	30	1.040	0.440	0.028	0.010	0.025
73/03/04	10	30	1.060	1.300	0.198	0.032	0.100
73/04/19	17	00	0.970	0.920	0.050	0.009	0.020
73/04/26	12	30	0.890	0.440	0.018	0.008	0.020
73/05/13			0.800	1.320	0.052	0.023	0.115
73/05/17	14	15	0.790	0.820	0.038	0.020	0.115
73/05/31	14	15	0.820	0.630	0.042	0.023	0.115
73/07/31	13	00	0.420	1.800	0.026	0.019	0.045
73/08/16	12	30	0.550	2.400	0.690	0.147	0.330
73/09/23	14	40	0.510	3.900	1.800	0.315	0.480

STORET RETRIEVAL DATE 74/11/27

361150 AS361150 P001750
43 03 00.0 076 34 00.0
WEEDSPORT VLG
36 15 WEEDSPORT
T/CROSS LAKE
COLD SPRINGS BROOK/SENECA RIVER
11EPALES 2141204
4 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P	50051 FLOW RATE INST MGD	50053 CONDUIT FLOW-MGD MONTHLY
73/04/09	08 30								
CP(T)-			1.790	5.100	0.092	1.470	1.500	0.383	0.574
73/04/09	16 30								
73/05/11	08 00		0.240	9.500	0.330	3.200	3.500	0.180	
73/06/01	08 30		0.971	7.300	0.155	1.800	2.200	0.185	0.205
73/08/27	08 00								
CP(T)-			2.140	6.400	6.400		5.000	0.160	0.155
73/08/27	15 00								
73/11/08	08 00								
CP(T)-			1.500	6.700	0.110	1.540	1.900	0.168	0.170
73/11/08	16 00								
73/12/12	09 00		0.600	9.000	0.060	0.475	0.655	0.160	0.150

STORET RETRIEVAL DATE 74/11/27

361153 PD361153 P007440
42 55 00.0 076 47 30.0
SENECA FALLS VLG
36 7.5 SENECA FALLS
T/CROSS LAKE
SENECA RIVER
11EPALES 2141204
4 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P	50051 FLOW RATE INST MGD	50053 CONDUIT FLOW-MGD MONTHLY
73/01/24	00 00								
CP(T)-			0.695	16.000	3.600	2.300	3.600	1.200	1.300
73/01/24	08 00								
73/02/15	00 00								
CP(T)-			0.780	25.000	8.400	3.600	5.100	1.200	1.300
73/02/15	08 00								
73/03/30	00 00								
CP(T)-			0.025	21.000	9.900	4.800	6.100	0.872	1.200
73/03/30	08 00								
73/04/24	00 00								
CP(T)-			0.140	21.550	10.850	5.200	6.300	0.987	0.980
73/04/24	08 00								
73/05/24	00 00								
CP(T)-			0.315	17.000		3.200	3.505	1.000	1.100
73/05/24	06 00								
73/06/29	00 00								
CP(T)-			0.720	23.000	12.400	2.700	3.450	1.200	0.900
73/06/29	08 00								
73/07/24	00 00								
CP(T)-			0.720	10.500	2.500	0.540	0.730	0.834	0.794
73/07/24	06 00								
73/08/23	00 00								
CP(T)-			0.710	23.000	11.200	2.080	2.400	0.920	0.853
73/08/23	08 00								
73/09/19	00 00								
CP(T)-			1.760	7.000	3.200	0.290	0.350	0.834	0.934
73/09/19	08 00								
73/11/09	00 00								
CP(T)-			0.505	18.500	7.700	0.950	1.150	0.900	0.950
73/11/09	08 00								

4/0

STORET RETRIEVAL DATE 74/11/27

361154 AS361154 P006000
43 01 00.0 076 28 00.0
WILLOW GLEN (SYRACUSE)
36 15 BALDWINVILLE
T/CROSS LAKE
SKANEATLES CREEK/SENECA RIVER
11EPALES 2141204
4 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P	50051 FLOW RATE INST MGD	50053 CONDUIT FLOW-MGD MONTHLY
73/07/17	11 40		0.230	34.500	10.500	3.150	5.800	0.350	0.500
73/08/23	12 30		0.176	33.000	11.800	3.300		0.350	0.500
73/09/28	11 00		0.300	35.000	22.000	4.300	6.800	0.350	0.500
73/10/24	11 00		0.370	44.000	15.000	4.400	7.100	0.350	0.500
73/11/28	11 00		1.470	14.300	0.160	1.200	2.650	0.350	0.500
74/01/23	11 00		1.480	8.100	0.110	1.100	1.750	0.350	0.500
74/02/24	11 00		1.600	7.500	0.137	0.805	9.800	0.350	0.500
74/03/26	11 00		0.640	13.000	0.130	1.550	3.300	0.350	0.500
74/04/29	10 30		0.600	31.000	5.700	2.800	5.500	0.350	0.500
74/05/23	11 00		0.920	42.000	1.800	3.600	6.200	0.350	0.500
74/06/24	11 00		0.330	22.000	0.068	1.700	4.100	0.350	0.500

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STORET RETRIEVAL DATE 74/11/27

361155 PR361155 P001300
43 01 30.0 076 52 00.0
CLYDE VLG
36 15 CLYDE
T/CROSS LAKE
CLYDE RIVER BARGE CANAL/SENECA RIVER
11EPALES 2141204
4 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P	50051 FLOW RATE INST MGD	50053 CONDUIT FLOW-MGD MONTHLY
72/12/20	08 00								
CP(T)-			6.400	37.000	0.021	4.725		0.200	0.300
72/12/20	16 00								
73/01/18	08 00								
CP(T)-			11.000	2.000	0.370	5.600	7.300	0.190	0.300
73/01/18	16 00								
73/02/14	00 00								
CP(T)-			11.100	2.400	0.125	4.000	4.776	0.190	0.210
73/02/14	08 00								
73/03/28	08 00								
CP(T)-			0.140	1.700	0.250	6.250	6.700	0.200	0.200
73/03/28	16 00								
73/04/27	08 00								
CP(T)-			3.600	8.600	1.000	5.000	6.300	0.190	0.270
73/04/27	16 00								
73/05/16	08 00								
CP(T)-			3.000	6.600	0.098	5.200	6.300	0.170	0.240
73/05/16	16 00								
73/06/20	08 00								
CP(T)-			0.231	9.000	0.290	4.620	7.200	0.180	0.280
73/06/20	16 00								
73/07/25	08 00								
CP(T)-			1.600	0.390	0.180	5.200	5.750	0.130	0.170
73/07/25	16 00								
73/08/16	08 00								
CP(T)-			0.200	15.000	2.500	2.800	18.500	0.130	0.140
73/08/16	16 00								
73/09/19	08 00								
CP(T)-			1.600	1.300	0.231	4.480	4.700	0.150	0.130
73/09/19	16 00								
73/10/18	08 00								
CP(T)-			0.145	12.000	3.150	1.600	3.500	0.150	0.140
73/10/18	16 00								
73/11/27	08 00								
CP(T)-			1.000	10.800	1.890	1.470	2.500	0.180	0.140
73/11/27	16 00								

STORET RETRIEVAL DATE 74/11/27

361155 PR361155 P001300
43 01 30.0 076 52 00.0
CLYDE VLG
36 15 CLYDE
T/CROSS LAKE
CLYDE RIVER RANGE CANAL/SENECA RIVER
11EPALES 2141204
4 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P	50051 FLOW RATE INST MGD	50053 CONDUIT FLOW-MGD MONTHLY
73/12/18	08 00								
CP(T)-			9.600	6.400	0.082	2.310	2.800	0.200	0.160
73/12/18	16 00								

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STORET RETRIEVAL DATE 74/11/27

361156 PD361156 P004100
43 03 30.0 076 59 30.0
LYONS VLG
36 15 CLYDE
T/CROSS LAKE
CLYDE RIVER BARGE CANAL/SENECA RIVER
11EPALES 2141204
4 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P	50051 FLOW RATE INST MGD	50053 CONDUIT FLOW-MGD MONTHLY
72/12/20	11	00							
CP(T)-			2.700	4.600	0.530	3.660	4.750	0.880	0.880
72/12/20	16	00							
73/01/10	11	00							
CP(T)-			13.300	9.150	0.126	2.688		0.500	0.800
73/01/10	16	00							
73/02/12	11	00							
CP(T)-			12.000	11.000	0.350	5.100	8.300		
73/02/12	16	00							
73/03/15	11	00							
CP(T)-			8.900	4.900	0.260	2.310	3.300	0.670	0.750
73/03/15	16	00							
73/04/09	11	00							
CP(T)-			7.100	8.600	0.190	3.200	5.600	0.670	0.670
73/04/09	16	00							
73/05/04	11	00							
CP(T)-			12.000	7.800	0.060	3.950	5.600	0.670	0.680
73/05/04	16	00							
73/06/13	11	00							
CP(T)-			1.260	14.700	3.300	4.300	5.300	0.670	0.680
73/06/13	16	00							
73/07/03	11	00							
CP(T)-			1.760	7.000	0.170	4.600	5.180	0.440	0.470
73/07/03	16	00							
73/08/01	11	00							
CP(T)-			2.520	5.500	0.066	3.000	5.100	0.450	0.440
73/08/01	16	00							
73/09/07	11	00							
CP(T)-			5.700	6.500	0.050	3.320		0.370	0.440
73/09/07	16	00							
73/10/01	11	00							
CP(T)-			6.400	5.600	0.050	3.900	4.300	0.420	0.380
73/10/01	16	00							
73/11/08	11	00							
CP(T)-			12.800	6.300	0.062	3.500	3.900	0.460	0.380
73/11/08	16	00							

STORET RETRIEVAL DATE 74/11/27

361156 PD361156 P004100
43 03 30.0 076 59 30.0
LYONS VLG
36 15 CLYDE
T/CROSS LAKE
CLYDE RIVER BARGE CANAL/SENECA RIVER
11EPALES 2141204
4 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P	50051 FLOW RATE INST MGD	50053 CONDUIT FLOW-MGD MONTHLY
73/12/05	11 00								
CP(T)-			13.600	5.800	0.130	3.780	4.600	0.380	0.440
73/12/05	16 00								

STORET RETRIEVAL DATE 76/11/27

361158 PR361158 P041800
42 56 30.0 076 36 00.0
AUBURN
36 15 AUBURN
T/CROSS LAKE
OWASCO OUTLET/SENECA RIVER
11EPALES 2141204
4 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P	50051 FLOW RATE INST MGD	50053 CONDUIT FLOW-MGD MONTHLY
73/01/09	07 00								
CP(T)-			5.700	13.000	0.740	1.635		8.730	9.890
73/01/09	16 00								
73/02/19	07 00								
CP(T)-			4.100	21.000	1.600	1.890	3.800	9.700	8.900
73/02/19	16 00								
73/03/21	07 00								
CP(T)-			4.800	8.300	0.240	1.100	2.100	16.400	14.400
73/03/21	17 00								
73/04/13	07 00								
CP(T)-			4.500	8.600	0.310	1.300	2.600	13.800	14.100
73/04/13	17 00								
73/05/17	07 00								
CP(T)-			4.500	11.500	0.180	1.400	2.800	12.600	12.200
73/05/17	19 00								
73/06/16	07 00								
CP(T)-			3.500	11.500	0.125	1.200	2.400	14.300	13.400
73/06/16	16 00								
73/07/19	06 00								
CP(T)-			2.300	12.000	0.420	1.400	2.200	12.500	13.500
73/07/19	17 00								
73/08/16	06 00								
CP(T)-			1.400	14.700	0.720	1.100		8.800	10.300
73/08/16	18 00								
73/09/18	00 00								
CP(T)-			3.300	7.400	0.025	1.575	2.000	11.900	8.800
73/09/18	12 00								
73/10/17	00 00								
CP(T)-			3.800	9.500	0.170	1.680	2.400	10.000	8.050
73/10/17	12 00								
73/11/14	00 00								
CP(T)-			3.500	13.000	1.680	3.700	4.300	7.790	7.510
73/11/14	12 00								
73/12/18	00 00								
CP(T)-			4.400	8.700	0.049	1.150	1.980	9.200	9.170
73/12/18	12 00								

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STORET RETRIEVAL DATE 74/11/27

341158 PR361158 P041P00
42 56 30.0 076 36 00.0
AUBURN
36 15 AUBURN
T/CROSS LAKE
OWASCO OUTLET/SENECA RIVER
11EPALES 2141204
4 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P	50051 FLOW RATE INST MGD	50053 CONDUIT FLOW-MGD MONTHLY
74/01/14	00 00								
CP(T)-			5.040	7.500	0.100	1.560	2.250	8.090	8.110
74/01/14	12 00								

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STORET RETRIEVAL DATE 74/11/27

361159 PR361159 P001260
43 02 00.0 076 38 00.0
PORT BYRON VLG
36 15 WEEDSPORT
T/CROSS LAKE
OWASCO OUTLET/SENECA RIVER
11EPALES 2141204
4 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P	50051 FLOW RATE INST MGD	50053 CONDUIT FLOW-MGD MONTHLY
72/12/19	08 00								
CP(T)-			0.189	28.000	13.000	3.400		0.063	0.068
72/12/19	16 00								
73/01/09	08 00								
CP(T)-			0.315	12.600	12.600	4.250		0.043	0.056
73/01/09	16 00								
73/02/09	07 00								
CP(T)-			0.460	23.000	13.900	5.800	6.800	0.052	0.058
73/02/09	15 00								
73/03/16	07 00								
CP(T)-			0.035	30.800	5.300	4.900	6.200	0.060	0.050
73/03/16	15 00								
73/04/14	07 00								
CP(T)-			7.900	24.000	2.400	1.790	4.900	0.057	0.065
73/04/14	16 00								
73/05/16	07 30								
CP(T)-			0.200	35.000	16.900	7.980	9.100	0.052	0.050
73/05/16	15 30								
73/06/12	07 30								
CP(T)-			0.075	35.000	17.000	5.550	6.800	0.152	0.056
73/06/12	15 30								
73/07/17	07 00								
CP(T)-			0.030	35.700	20.000	4.500	6.150	0.041	0.046
73/07/17	15 00								
73/08/23	08 00								
CP(T)-			0.042	44.000	19.800	3.620		0.048	0.046
73/08/23	15 00								
73/09/21	08 00								
CP(T)-			0.110	31.000	19.300	4.300	5.500	0.042	0.060
73/09/21	16 00								
73/10/15	08 00								
CP(T)-			0.040	33.000	16.800	2.500	4.000	0.048	0.045
73/10/15	15 00								
73/11/28	08 00								
CP(T)-			0.500	33.000	17.000	2.600	3.800	0.038	0.045
73/11/28	15 00								

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STORET RETRIEVAL DATE 74/11/27

361159 PR361159 P001280
43 02 00.0 076 38 00.0
PORT BYRON VLG
36 15 #EEDSPORT
T/CROSS LAKE
OWASCO OUTLET/SENECA RIVER
11EPALES 2141204
4 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P	50051 FLOW RATE INST MGD	50053 CONDUIT FLOW-MGD MONTHLY
73/12/19	08 00								
CP(T)-			0.800	34.000	16.000	3.000	4.300	0.037	0.045
73/12/19	16 00								